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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,068	02/18/2005	Yoshiki Hashizume	0033-0983PUS1	5831

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EXAMINER

ABU-ALI, SHUANGYI

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/525,068	Applicant(s) HASHIZUME ET AL.	
	Examiner Shuangyi Abu-Ali	Art Unit 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>02/18/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

(1)

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,3 and 6 rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 5,624,486 to Schmid et al.

Regarding Claim 1, Schmid et al. describe a metallic substrate particle such as aluminum, having a surrounding metal oxide coating, such as molybdenum oxide, which maybe further overcoated with a silicon oxide and/ or silicon oxide hydrate (col. 3, lines 19-27 and col. 3, lines 51-69).

Regarding claims 2 and 3, Schmid et al describe in one of their pigment examples that the molybdenum amount is 2.2% and the silicon oxide amount is 18.8%(col. 9, lines 49-57).

Regarding claim 6, Schmid et al. describe that the pigment can be applied in plastic pigmentation (col. 1, line 57). In one of their example of using pigment in coating, 0.4 g pigment was suspended in 3.6 g polyester varnish. This converts to an 11% aluminum pigment content (col.8, lines 55 –58).

(2)

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 13 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by U.

S. Patent Publication US 2004/0194663 to Li et al.

Regarding claims 13 and 14, Li et al. disclose that different surface treatments can be applied to the metallic pigment. They disclose that silicon layer can improve the dispersibility properties of pigments while simultaneously used silane coupling agent layer can improve the hydrophobic and oilphobic properties of pigments (paragraph [0114], line 14 and paragraph [0117], lines 3- 5).

Li et al. disclose the following procedure for produce high anti-corrosive metal pigment (paragraph [0157], lines 1 to 13):

- 1) The aluminum particles are suspended in an organic solvent such as ethanol;
- 2) The above solution temperature is raised and a basic hydrolysis catalyst such as aqueous ammonia is added into above solution, which would adjust the PH of the solution up (paragraph [0107]);

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3) Organic silicon compound such as tetraethoxysilane and silane coupling agent such as γ -(2-aminoethyl)aminopropyltrimethoxysilane are added into the above solution; and filtering and drying to obtain the pigment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

(3)

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 5,624,486 to Schmid et al as applied to claim 1 above, and further in view of US Patent Publication US 2004/01944663 to Li et al.

Regarding claim 4, Schmid et al. describes a metallic substrate particle such as aluminum first goes through a metal oxide coating followed by being coated by silicon oxide or silica hydride (col. 3, lines 19-27 and col. 3, lines 51-69).

Although Schmid et al. are silent about the additional protective layer being prepared from silane coupling agent, Li et al. describe that silane coupling layer can be used to treat pigment surface (col.8, lines 3-5).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention by applicant to utilize the method of preparing protective layer from silane coupling agent on silica coat described by Li et al., motivated by the fact that both inventions are drawn to procedures to produce water and chemical resistant pigments and furthermore by the fact that Li et al. disclose that the use of silane coupling agents in the formation of pigment coatings can improve the hydrophobic and oilphobic properties of pigments(Paragraph [0117]).

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Regarding claim 5, Li et al describe that silane coupling agent such as γ -(2-aminoethyl)aminopropyltrimethoxysilane is used to prepare a layer to a pigment (paragraph 0157, lines 7-8).

(4)

Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S.C. Patent No. 5, 637,143 to Jenkins et al., in view of U. S. Patent No. 5, 624,486 to Schmid et al.

Regarding claims 7, Jenkins et al. disclose a method for the manufacture of an aluminum pigment wherein a molybdenum coating is applied thereto by stirring a dispersed solution of aluminum particles and a molybdenum compound (col. 7, lines 49-57).

Jenkins et al., however, is silent as to the provision of a further silica coat as required by applicant claim 7.

Schmid et al., however, also drawn to methods for the formation of pigments, disclose that a silica coating can be provided onto an aluminum pigment having an outer molybdenum coating via a hydrolysis of an organic silicon compound with a hydrolytic catalyst (col. 6, lines 3-8; col.6, lines 29-35; and col. 8, lines 24-28).

It would have been obvious to one of ordinary skill in the art at the time of invention to provided the molybdenum-coated aluminum pigment of Jenkins et al. with a silica coating, as taught by Schmid et al., motivated by the fact that Schmid et al disclose that such top layers has the effect, particularly in the case of the metallic under

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layers, of distinctly improving the resistance of the pigment to environmental factors (col. 4, lines 56-58).

Regarding claim 8, Jenkins et al. disclose that the molybdenum starting material used is phosphomolybdic acid (col. 7, lines 52-53).

Regarding claims 9-11, Schmid et al. disclose that tetraethoxysilane is used as the organic silicon compound (col. 11, line 32). Hydrolysis reaction takes place in the presence of tetraethoxysilane (col.11, line 11), organic solvent and basic catalyst such as ammonia solution (col.6, line 33). Since basic ammonia solution used in reaction, the pH of the reaction mixture will be adjusted upward into the basic range (7-11).

(5)

Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 5,637,143 to Jenkins et al. and U. S. Patent No. 5,624,486 to Schmid et al., as combined above, in further view of U.S. patent publication US 2004/0194663 to Li et al.

Jenkins et al. and Schmid et al., as combined above, disclose a method for manufacture of molybdenum and silica coated aluminum pigment. They do not, however, disclose that the coated pigment is further provided with a silane coupling agent coating.

Nonetheless, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the pigment resulting from the combination of Jenkins et al. and Schmid et al. with a silane coupling agent motivated by the fact that Li et al., also

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drawn to methods for the formation of coated aluminum pigments disclose that silicon layers can improve the dispersibility properties of pigments while simultaneously used silane coupling agent layers can improve the hydrophobic and oilphobic properties of pigments(paragraph [0114], line 14 and paragraph [0117], lines 3-5).

(6)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Such prior art includes reference C listed on Form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuangyi Abu-Ali whose telephone number is 571-272-6453. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


J. A. LORENGO
SUPERVISORY PATENT EXAMINER